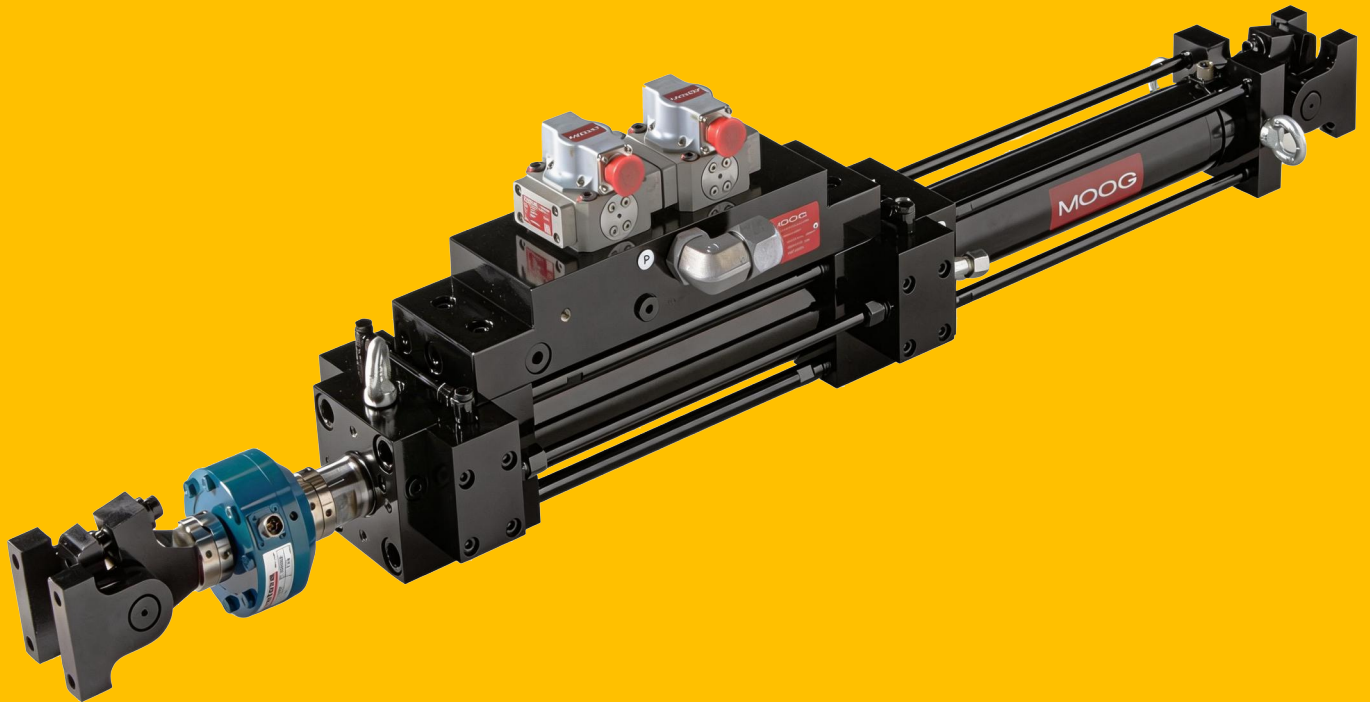


Hydraulic Test Servo Actuator

Hydrostatic Endcap



Rev. -, March 2026

HIGHER LEVEL OF DYNAMIC PERFORMANCE,
RELIABILITY AND LONGEVITY

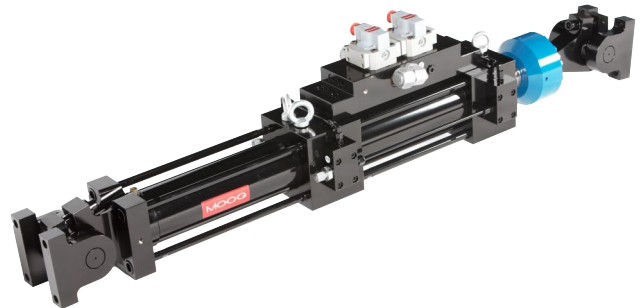
Whenever the highest levels of motion control performance and design flexibility are required, you'll find Moog expertise at work. Through collaboration, creativity and world-class technological solutions, we help you overcome your toughest engineering obstacles. Enhance your machine's performance, achieve greater efficiencies and help take your thinking further than you ever thought possible.

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This catalog is for users with technical knowledge. To ensure all necessary characteristics for function and safety of the system, the user has to check the suitability of the products described herein. The products described in this document are subject to change without notice. In case of doubt, please contact Moog.

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PRODUCT OVERVIEW

Moog brings decades of expertise in high-performance actuators for demanding test environments. The latest design C086-6E Hydraulic Test Servo Actuator, Hydrostatic Endcap, is engineered for complex test applications like automotive component testing, multi-axis platforms, and vibration simulation. It combines structural innovation and material optimization to raise overall test performance.

The C086-6E series features a symmetric cylinder with a hydrostatic bearing embedded in the endcap.

A controlled oil film enables non-contact, low friction motion, minimizing stiction and enhancing dynamic responses. It ensures stability under heavy side loads and extends service life. Optimized flow paths in the manifold and cylinder improve oil uniformity and responsiveness. The piston rod's tungsten carbide coating delivers exceptional hardness and wear resistance. Cushion chambers at both ends absorb end-of-stroke impact to protect the actuator and test specimen. The highly integrated valve block can be supplied with servo valves, sensors and accumulators to simplify external piping. A central coaxial LVDT interface enables high-accuracy displacement measurement.

Actuator Series: C086-6E

Features	Benefits
5 rated forces: 15 to 150 kN 3 working strokes: 100 to 250 mm	Available in various sizes to suit a range of application
Modular design with key configurations, such as options of joints and mounting bases	Enhancing flexibility to configure the actuators for specific applications
4 pocket hydrostatic bearing	Improved side load test capabilities, allowing for higher load, improved stability, and better damping
Integrated manifold design	Reduce exterior piping for improved efficiency and lowering service costs
Advanced cushion design – cushions at the end of stroke in both directions	Higher reliability and safety
Tungsten carbide coating for piston rod	Improves service lifetime of the actuator, the coating reduces friction which improves overall performance and efficiency of the piston rod

Solutions Built Around you

The C086-6E balances top-tier dynamic performance with system integration cost and application flexibility. Integrated manifold and modular configurations shorten system adaptation time and deliver a high-performance, cost-effective solution.

Typical Applications

- Electrohydraulic Multi-Axis Test Systems
- Dynamic testing of automotive components
- Durability testing under heavy side-load conditions

SPECIFICATIONS

Key Actuator Specifications

Model Number	Rated Force	Static Force ¹⁾	Full Stroke	Working Stroke	Cushion Length ²⁾	Rod Diameter	Bore Diameter	Effective Piston Area
Unit	kN	kN	mm	mm	mm	mm	mm	cm ²
C086-6E3	15	20	154, 204,304	100, 150, 250	27	45	57	9.6
C086-6E4	25	32	154, 204,304	100, 150, 250	27	45	63	15.3
C086-6E5	50	59	154, 204,304	100, 150, 250	27	80	100	28.3
C086-6E6	100	113	154, 204,304	100, 150, 250	27	100	130	54.2
C086-6E7	150	158	154, 204,304	100, 150, 250	27	100	140	75.4

1) Calculated at 210 bar operation pressure

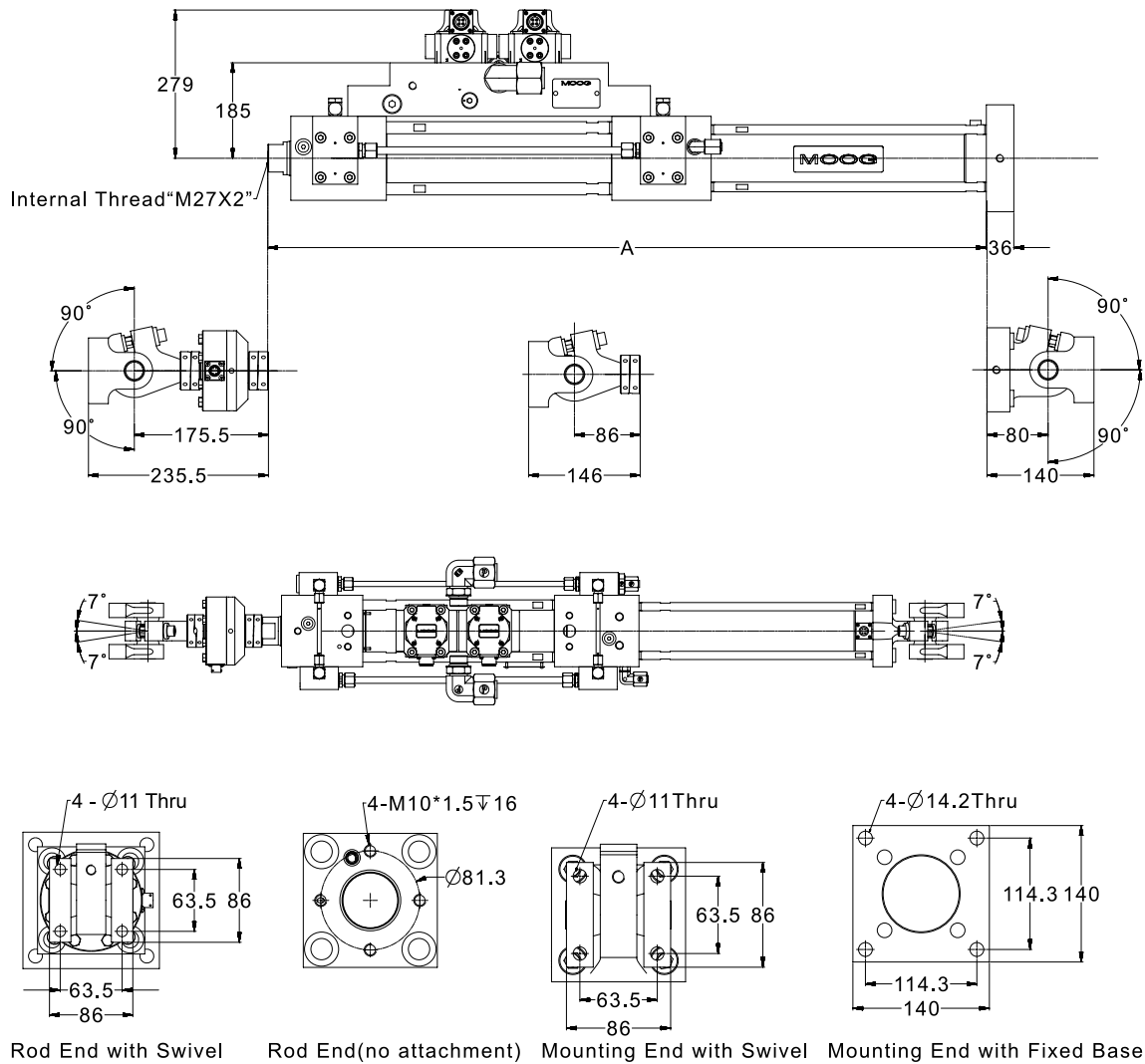
2) Cushion at both ends

Additional Specifications

Pressure		
Operating pressure	210 bar	
Maximum return pressure	14 bar	
Maximum drain pressure	3.5 bar	
Seal		
Material	NBR	
Hydraulic interface		
Pressure line	G761	JIC 37 ° Flare (ISO 8434-2) - 16
	72, 79-100 and D791	JIC 37 ° Flare (ISO 8434-2) - 24
	79-200 and D792	SAE Flange (ISO 6162) - 2"
Return line	G761	JIC 37 ° Flare (ISO 8434-2) - 16
	72, 79-100 and D791	JIC 37 ° Flare (ISO 8434-2) - 24
	79-200 and D792	SAE Flange (ISO 6162) - 2"
Drain line	G761, 72, 79-100 and D791	JIC 37 ° Flare (ISO 8434-2) - 6
	79-200 and D792	JIC 37 ° Flare (ISO 8434-2) - 8
Pilot line	All valves	JIC 37 ° Flare (ISO 8434-2) - 6
Operation temperature		
Recommended hydraulic fluid temperature	35 to 55°C	
Ambient temperature	75 °C maximum	
Oil requirements		
System fluid	Hydraulic oil as per DIN 51524 parts 1 to 3 and ISO VG 32, 46 or equivalent	
Cleanliness level	ISO 4406 17/14/11 or better	
Standard electrical connector mates with the following, or equivalent (waterproof, IP65)		
G761 servo valve	MS3106F14S-2S (MIL-DTL-5015)	
72 servo valve	MS3106F14S-2S (MIL-DTL-5015)	
79 servo valve	MS3106F14S-2S (Pilot valve, MIL-DTL-5015) MS3106F14S-5S (Main stage LVDT, MIL-DTL-5015)	
D791 & D792 servo valve	6+PE-Socket (DIN EN 175201-804, Type R)	
Position transducer & load cell	PT06A-10-6S (MIL-DTL-26482)	
Delta-P pressure transducer	PT06A-8-4S (MIL-DTL-26482)	

CRITICAL DIMENSIONS

C086-6E3 and C086-6E4

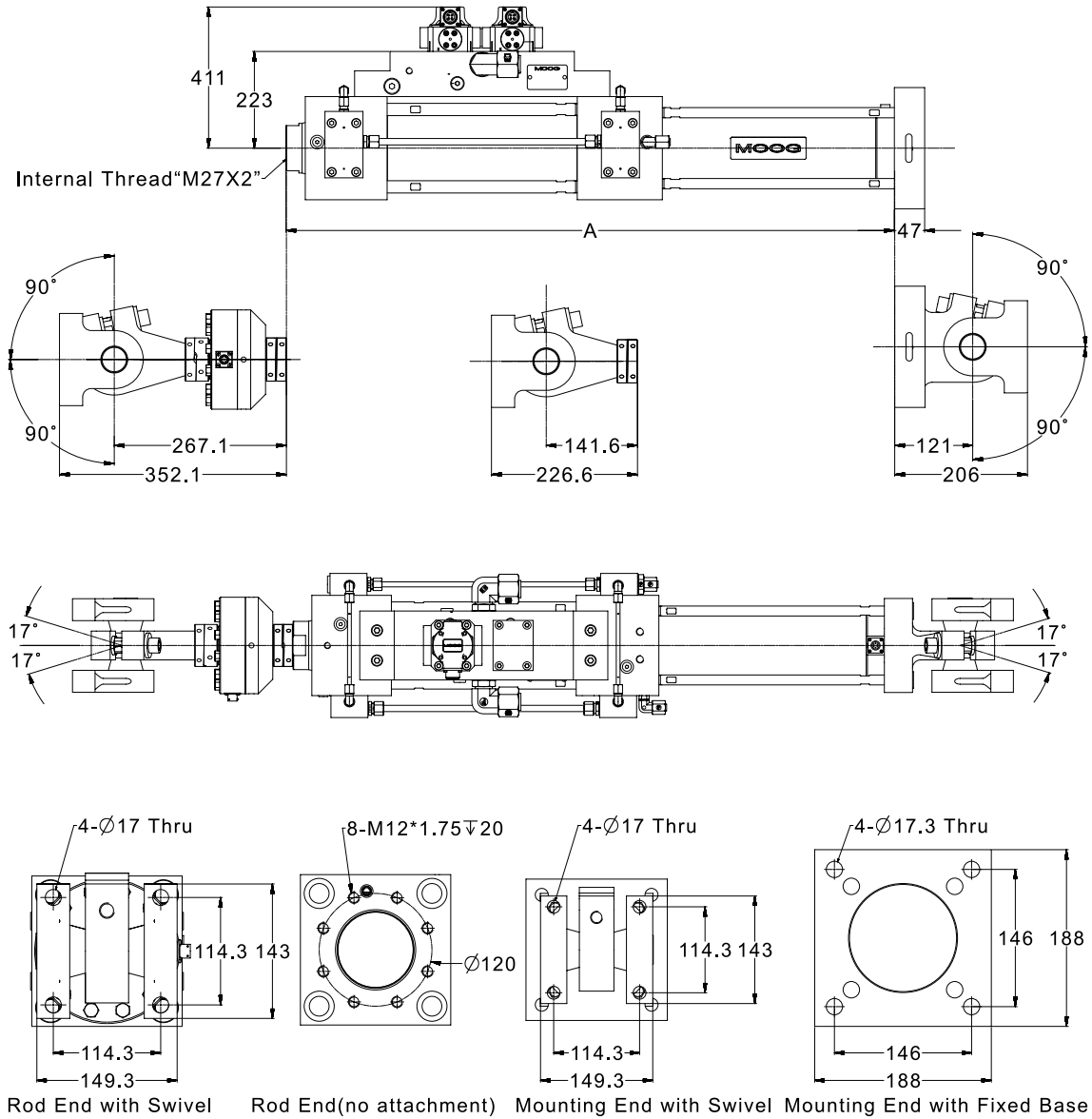


Model	Rated Force	A					
		Working stroke 100		Working stroke 150		Working stroke 250	
		Retracted	Extended	Retracted	Extended	Retracted	Extended
	(KN)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
C086-6E3	15	640	944	740	1,044	940	1,244
C086-6E4	25	640	944	740	1,044	940	1,244

G761 valves are shown in above drawings, for dimensions with other valve configurations, please refer to the corresponding valve catalog.

CRITICAL DIMENSIONS

C086-6E5

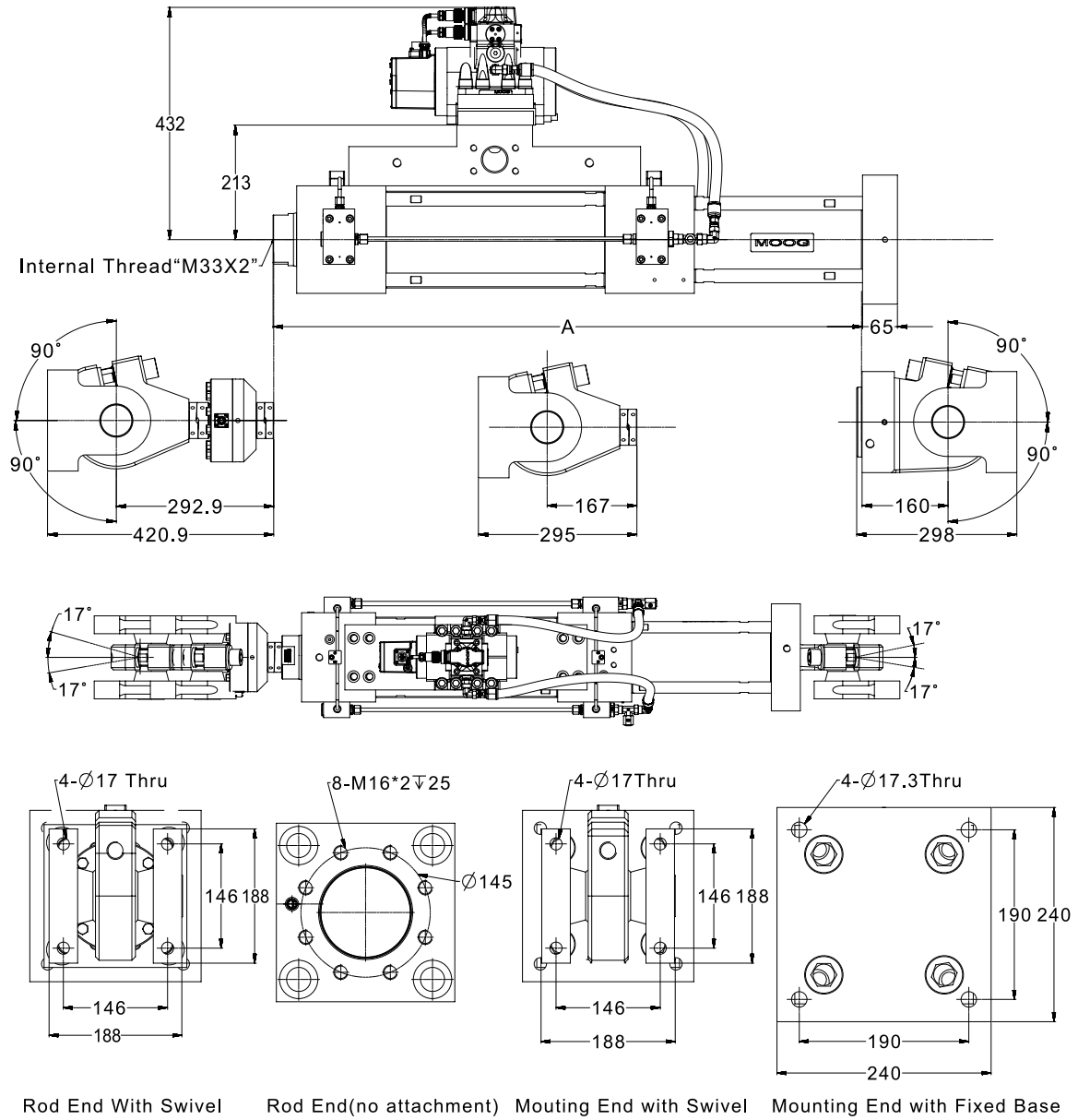


Model	Rated Force	A					
		Working stroke 100		Working stroke 150		Working stroke 250	
		Retracted	Extended	Retracted	Extended	Retracted	Extended
	(KN)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
C086-6E5	50	644	948	744	1,048	944	1,248

G761 valves are shown in above drawings, for dimensions with other valve configurations, please refer to the corresponding valve catalog.

CRITICAL DIMENSIONS

C086-6E6 and C086-6E7



Model	Rated Force	A					
		Working stroke 100		Working stroke 150		Working stroke 250	
		Retracted	Extended	Retracted	Extended	Retracted	Extended
	(KN)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
C086-6E6	100	771	1,061	871	1,161	1,071	1,361
C086-6E7	150	797	1,087	897	1,187	1,097	1,387

D791 valves are shown in above drawings, for dimensions with other valve configurations, please refer to the corresponding valve catalog.

TECHNICAL FEATURES

CONFIGURATION ACTUATOR TO MEET YOUR NEEDS

A variety of available configurations allows you to design the exact actuator that you need for your test system for increased modularity. Moog can provide a series of servo valves and various manifold options to match your needs as well as offer a range of joints and bases for maximum efficiency.

Servo Valve

G761 (1 or 2 pieces), 72, 79, D791 or D792; rated flow from 63 to 800 l/min.

Joint and Base

Rod end can be fitted with a swivel. Base end options include fixed base or a swivel.

Built-in Co-axial LVDT Position Sensor

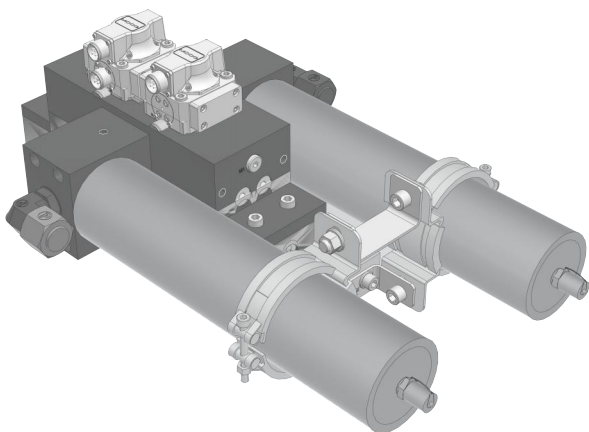
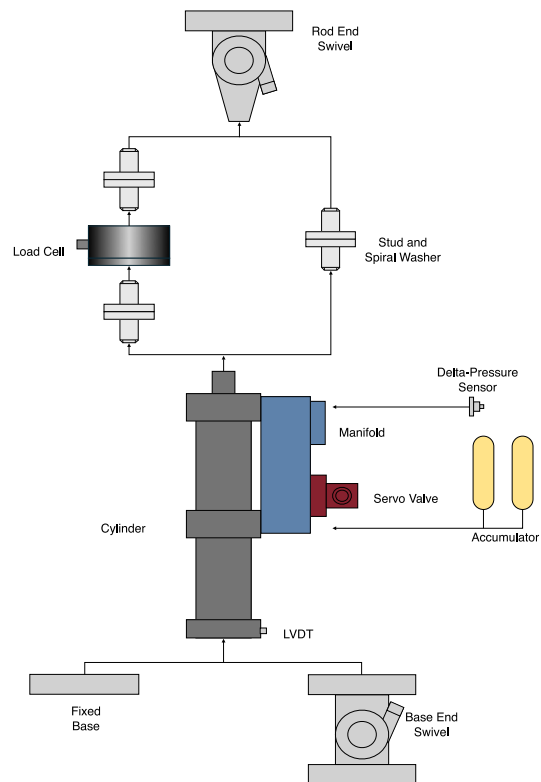
Frictionless operation of LVDT core moves without contact with the housing, ensuring long-term reliability and minimal wear and tear. Using just simple tools, the LVDT can be null adjusted easily.

Load Cell

Fatigue-rated load cells are properly sized to provide reliable force feedback. Accessories such as studs and spiral washers are typically provided together with the load cell.

Manifold Options

Optional components include differential pressure (Delta-P) sensor and accumulator.



A configuration includes 2 pieces of G761 valve and an accumulator unit. The accumulators are installed in series with the pressure and return ports, respectively, which are located on both sides of the manifold block, providing a large instantaneous flow supply and reducing pressure peak pulsation.

ORDERING CODE

C086 - 6 E X X X X X X XXXX

Test Actuator

Model Revision

Actuator Type	
6	Hydrostatic bearing

Structure Type	
E	End Cap

Actuator Force		
Specify	Force Rated	
	kN	kip
3	15	3.3
4	25	5.5
5	50	11
6	100	22
7	150	33

Working Stroke		
Specify	mm	inch
A	100	4
B	150	6
D	250	10

Servo Valve with Manifold		
Specify	Type	Rated Flow
A	G761	63 l/min (16.5 gpm)
B	G761 (x2 pcs)	2x 63 l/min (33 gpm)
D*	-72	227 l/min (60 gpm)
E*	-79-100	227 l/min (60 gpm)
F*	D791	250 l/min (65.5 gpm)
G**	-79-200	378 l/min (100 gpm)
H**	D792	400 l/min (104.8 gpm)
J**	-79-200	756 l/min (198 gpm)
L**	D792	800 l/min (209 gpm)
I	Special manifold and/or Servo valve	
* Valve option D,E and F are available only for 50, 100 and 150 kN		
** Valve option G, H, J, K and L are available only for 100 and 150 kN		

Special	
SXXX	Special
Blank	Standard

Force Sensor Coupling	
Specify	Type
N	None
W	Spiral washer
L	Loadcell+Spiral washer

Rod End Style	
Specify	Type
0	None
1	Swivel

Mounting Style	
Specify	Type
A	Swivel
B	Fixed base

Manifold Option	
Specify	Description
-	None
P	Delta-P pressure transducer
A	Accumulator P+R

A HIGHER LEVEL OF SUPPORT

The actuator was designed to provide long life, and inexpensive, fast and easy repair when it is finally necessary. Moog can provide the typical wear items such as a replaceable bearing and the seals for your own repair. Or you can have Moog repair the actuator to a like-new condition.

Five Point Inspection Process

Our number one goal is to eliminate downtime and make repairs that will deliver reliability and cost savings for years to come. When you send in your repair, it must work like new when you get it back. This is the Moog Global Support promise.

- Incoming inspection will provide the customer details on the performance of the actuator assembly such as leakage and response. The inspection will also provide details to our technicians in regards to critical performance specs that need to be addressed.
- Technicians will then review engineering notes for any design improvements that may have been initiated since inception.
- Actuator assembly will get completely disassembled to piece parts. Aqueous Ultrasonic cleaners are used to thoroughly clean each component before inspection and dimensional checks. Any components found too worn will be replaced with OEM parts. Critical components such as fitted rod and bearings will be dimensionally checked to ensure the component meets the print criteria. A complete seal kit replacement will be installed to ensure integrity of the structure.
- The servo valve will be removed and sent through the same rigorous evaluation, disassembly and test.
- Finally, the assembly will be tested to original specs to ensure the overhauled unit meets all design and performance criteria as if it were new.

Moog Engineering On Call For You

Delivering world-class motion control products and solutions means taking customer support far beyond the initial sale. It requires a dedicated approach to solving your problems, addressing your machine challenges and helping you achieve maximum productivity on a daily basis. In today's competitive manufacturing environment, machine performance plays a significant role in determining your bottom line. Moog Global Support is key to achieving cost-effective machine operation, day in and day out.

Actuator Repair Capabilities

Moog Global Support is designed to keep your critical machines up and running at peak performance with only 100% genuine Moog replacement parts. Only Moog replacement parts can deliver the reliability, versatility and long life that you would expect from a world leader in motion control solutions. Each Moog part delivers essential components with precise dimensions, close tolerances and specific materials specifications. Because we understand the key role our parts play in the overall operation of your machine, we carefully inspect and test each repair to identify only those components that need replacement.

Take The Next Step

Isn't it time you worked with a partner who can offer both the world-class products and collaborative expertise you need to reach the next level of performance? Contact us today and see for yourself the difference the right partner can make.



MOOG TEST PRODUCTS-FOR EVERY TESTING NEED

Moog engineers are always ready to meet your unique application needs with building blocks or complete turnkey systems that include hydraulic or electric test actuators, servo valves, hydraulic service manifolds, test controllers, software and more.

Test Controllers and Software

The Moog Test Controller is a real-time modular control system that can control or collect data from any hydraulic or electromechanical test system. The robust and compact modules have a wide range of transducer inputs and control outputs that can be easily configured for optimum use. The Moog Test Software allows the end user to control and record all of these signals in an easy to use format providing maximum value for many years of reliable usage.



Test Software Module

Moog Integrated Test Suite helps you to match your investment to your unique test requirements. Four modules: Runner, Replication, Sinesweep, and Random Vibration, can be used independently or combined as your requirements change and the same module can be used for different test systems in your test labs.

Moog Servo Valves

Because we design our renowned Moog Servo Valves - the world standard in performance and durability - you're assured of a system tailored to your exacting requirements.



Hydraulic Service Manifolds

The Moog Hydraulic Service Manifold (HSM) provides on/off hydraulic pressure with an adjustable transition from off to high pressure. Filters protect sensitive servo valves and accumulators provide instantaneous flow or pressure damping when needed. Several flow-rating sizes with 1 to 4 station options are available.

MORE PRODUCTS. MORE SUPPORT.

Moog designs a range of motion control products that complement those featured in this document. Moog also provides service and support for all of our products. For more information, contact the Moog facility closest to you.

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